

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

REGION 2

10 HEINZ AVE., SUITE 200  
BERKELEY, CA 94710-2737

August 31, 1995

N00217.003122  
HUNTERS POINT  
SSIC NO. 5090.3



Engineering Facilities Activity, West  
Attn: Mr. David Song [1832.3]  
900 Commodore Drive  
San Bruno, California 94066-5006

Dear Mr. Song:

**DRAFT FINAL TREATABILITY STUDY FOR TREATING SUBSURFACE PETROLEUM  
PRODUCTS AT SITE IR-3 BY BIODEGRADATION, HUNTERS POINT ANNEX**

The Department of Toxic Substances Control is forwarding the enclosed comments on the above report from the Regional Water Board for your consideration.

Should you have any questions regarding this letter and would like to seek clarification, please call me at (510) 540-3821.

Sincerely,

A handwritten signature in black ink, reading "Cyrus Shabahari", is written over the typed name.

Cyrus Shabahari  
Project Manager  
Office of Military Facilities

Enclosure

cc: US EPA, Region IX  
Attn: Sheryl Lauth  
Mail Code H-9-2  
75 Hawthorne Street  
San Francisco, California 94105

Regional Water Quality Control Board  
Attn: Richard Hiett  
2101 Webster Street, Suite 500  
Oakland, California 94612



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD****SAN FRANCISCO BAY REGION**

2101 WEBSTER STREET, SUITE 500

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**VIA FACSIMILE: 510.540.3819**

Mr. Cyrus Shabahari

Department of Toxic Substances Control

Office of Military Affairs

700 Heinz Avenue

Berkeley, CA 94710

August 29, 1995

File: 2169.6032

**RE: HUNTER'S POINT ANNEX, DRAFT FINAL TREATABILITY STUDY FOR TREATING  
SUBSURFACE PETROLEUM PRODUCTS AT SITE IR-3 BY BIODEGRADATION  
WORKPLAN - JULY 10, 1995**

Dear Mr. Shabahari:

Regional Board Staff have reviewed the aforementioned document and have enclosed the following comments.

Questions regarding these comments can be directed to myself at (510) 286-4359 or Ms. Shin Roei Lee at (510) 286-0699.

Sincerely,

Richard Hiatt

Enclosures

#### General Comments:

1. It is not appropriate to consider vadose zone soil bioremediation when LNAPLs have not been removed. Product recovery by pumping done in 1990 appeared to be ineffective. However, other best available technologies such as bioslurping and vacuum-enhanced product recovery should be evaluated and implemented prior to soil bioremediation. These BATs are intended to overcome problems encountered in recovering viscous LNAPL in fine grain materials.
2. It is not appropriate to use soil slurry (15% solids) in the respirometry study because it is not relevant to what would be done in the field since "Slurry phase bioreactor treatment...was rejected as too expensive for full scale treatment of the soil from IR-3".
3. There are substantive ARARs in Chapter 15, Title 23, California Code of Regulations for construction, monitoring, operation and closure of a land treatment unit where the solid phase bioremediation will be implemented. Compliance with ARARs will have to be addressed prior to full scale operation. Depending upon the scale and duration of the pilot test, compliance with ARARs may also need to be addressed to the extent feasible.
4. Other similar or enhanced bioremediation technologies should be evaluated concurrently during the treatability study to expedite selection of the most effective way to bioremediate IR3 soil. Thermal treatment and soil washing are two other alternatives to the solid-phase bioremediation that can be used to lower the high soil concentrations at IR3 to levels that are amenable to bioremediation. Given this study was first proposed more than two years ago and a lot has been invested into this effort, the incremental benefit associated with adding other alternatives for evaluation in this study should justify the incremental cost.

#### Specific Comments

5. **Page 15, Respirometry Task Description, 2nd paragraph, 3rd sentence** - It is not appropriate to use soil slurry (15% solids) in the respirometer study because it is not relevant to what would be done in the field since "Slurry phase bioreactor treatment...was rejected as too expensive for full scale treatment of the soil from IR-3". Respirometry test should be done to best simulate future treatment conditions to provide useful information to evaluate the effectiveness of bioremediation.
6. **Page 16, Respirometry Test Description, 4th paragraph** - "Since a slurry system is the most efficient bioremediation system, ...the residual levels achieved here could

potentially be used to determine the performance level for the site." Please see comment #5.

7. **Page A-3, 3.0 SAMPLE LOCATION AND FREQUENCY** - Soil samples are proposed to be taken at 2, 4 and 6 feet at 3 randomly selected locations in the North Pond and in the South Pond for characterization and treatability study. This would represent the moderately contaminated soil in the backfill of the ponds. Based on Plate 1-4 (Maximum TPHd and TOG Concentrations in Soil), the soil at 6 feet and below at some locations is either equally or more contaminated than the soil within the top 6 feet. The usefulness of the treatability results may be limited if you do not target the most contaminated soil.